

An adjuvant for accelating an enzyme activity

Cross-refference to related application

[0001]

This invention claims priority under 35 U.S.C.S. 119 to Japanese patent application No.2003-060659 filed on January 30, 2003, the entire contents of which is hereby incorporated by reference.

Background of the invention

[0002]

This invention relates to an adjuvant for accelating an enzyme activity and more particularly a novel adjuvant which can be induced from the organic substances or the organic compounds, under contacting with microorganism group in nature, clay catalyzers, enzymes and water, and which can revive a deteriorated living environment and biomechanism to their mormal condition, and improve excellently the functions of the living or biorogicl body tissue.

[0003]

Customary, it has been already disclosed in Japanese patent application publication.No. Kokai Hei 4-238887 and Hei 4-265286 that an activated humic agricultural material, a seed bacillus liquid, agricultural fertilizer and soil activater have been manufactured from organic substances or organic compounds under contacting with the catalizers including microorganisms in nature, clay catalizers, etc.

[0004]

However, nowadays, the globe and the olganic system or organism living on it, has fallen ill respectively, and they have come to a worst

situation that it could not been restored by their management and restration fculties only furnished naturally in their evolution.

[0005]

One of those origins results in the living refuse and sewage, which is discharged plentifully from the human society into the natural world, in accordance with development of the world civiliztion. The living refuse is presently burned or molten to treat, however, the treatment discharges heat and bad material into the air, and the bad material such as it's residue or ash, etc., have to be buried under the ground to treat them .

The dirt or filthy water discharged from men and beasts, can not be treated completely by any latest techniques, and consequently they are buried under the ground, or discharged into the river, as the burned ash or diluted non- toxic solution.

[0006]

Those discharged materials are still in existence to accumulate in a form of a harmful consentrated substance, which can not be treated away by a force of nature, after dissolved into a sea, a river or a lake through the global cycle system, and they are taken into the human body through a drinking water or a food, and some of them, which can not be decomposed by human functional mechanism, are accumulated and condensed therein.

[0007]

Once, the human living refuse, the dirt or filthy water dischrged from men and beasts on the globe, have been completely consumed by contacting with water, mineral soils, microorganisms, etc., created in the global system, by mutual supply and consumption under their symbolism, and a balanced harmless

environment between supply and consumption in nature has been maintained consequently.

However, a great deal of the discharges from the men and beasts are now destroying not only the balance between the above natural supply and consumption systems but also a human fundamental physiological function.

[0008]

Many activated materials and techniques, which can maintain such normal cycle systems, have been provided for the persons skilled in the art, in view of those considerations, however, those arts have not given any satisfactory results so far.

In such prior arts, for example, Patent application publication No. Hei 4-238887, discloses, for above object, an activative humus agricultural material comprising an aged mixture of an agricultural waste material, a livestock raising waste material, a microorganism activated catalizer (a mixed structural rock mineral) and diatomaceous earth, and also Patent application publication No. Hei 4-265286 describes, for a same object, a soil microorganism group and their metabolic materials extracted from a highly aged compost, and an activated soil microorganism group and concentrated extracts from their metabolites, which include an effective component aquatic solution of the mixed structural rock mineral for activation of the microorganism group, and discloses also that those substances are used as seed bacillis, crop fertilizers or soil activaters.

[0009]

However, those activated hemic agricultural materials could achieve an expected purpose but they did not prepare actually a natural environmental purification cycle faculty such as functions for extinction of the living

organic waste, the discharged sludges and the filthy waters, and for recovery of physiological fundamental function in the vital system.

[0010]

Accordingly, it is an object of the present invention to provide with an adjuvant for accelating enzyme activity providing natural purifiction cycle ability, which could not been setteled so far by the prior art.

[0011]

It is an other object of the present invention to provide with an adjuvant for accelating enzyme activity providing a faculty closely related to an ability for recovery of physiological fundamental function in the vital system.

[0012]

It is further object of the present invention to provide with an adjuvant for accelating enzyme activity manufactured from the biomass.

[0013]

It is futher more object of the present invention to provide with an adjuvnt for accelating enzyme activity manufactured from the bioresidue.

Means for solving problem

( A ) Fundamental human physiological function and enzyme action

[0014]

Originally, it is evidently that existence of microoganism, clay catalizer, biocatalyst ( enzyme ) and water prepared in the natural world, is indispensble to prification of the global environment, as disclosed in the above two prior patent applications, while, cast and action of the enzyme in a phenomenon that a life body concerned, is also indispensable respectively, as same as above reaction.

same as above reaction.

In other words, the life is very closely connected with the enzyme and therefore a problem on its origin relates to principally the same of enzyme itself.

The enzyme can be produced by very complex system only, which is directly produced from a living body or living cell.

Accordingly, it is necessary to exist all enzymes of all systems for formation of an individual enzyme molecule.

[0015]

Those enzymes are useful to supply energy, which is necessary on formation or synthesis for all kinds of components of a nucleic acid, relating to formation or synthesis system of an amino acid, which becomes a material of an enzyme protein.

All biocells are generally organized from many same materials, however, in many organisms, same conjugated cooperative factors, prosthetic molecular group, and essentially same enzymes, etc., are discovered also.

The organism itself has to receive many important ingredients of many enzymes from the others, in many times, because the organism can not synthesize them directly.

( B ) Mechanism of enzyme reaction

[0016]

The enzyme, which can not be self-synthesized in the organism, can induce, at high speed without any side reaction, a chemical reaction which is difficult to induce with the chemical process.

Such reaction takes place by catalytic action of the enzyme and exchanges electron between a reactive substrate ( S ) and an enzyme ( E ) to induce some

polarization or stress in the former, and finally it is activated.

An oxidoreductase, a transferase and a hydrolase, etc., are classified into such enzymes, which cause those actions.

[0017]

In the other side, fifteen kinds of metallic cation having 1 to 3 atomic valency, such as  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Rb}^+$  .....  $\text{Ni}^{++}$  .....  $\text{Cr}^{+++}$  .....  $\text{Al}^{+++}$  ..... strongly affects to activation of the enzyme and to production of the present adjuvant for accelerating enzyme activity.

The mechanism of specific enzyme activation by those metallic cation can be explained as follow;

- (1) The metallic cation makes an organic molecule connect to a protein.
- (2) The reaction is affected strongly by PH.
- (3) Inactivated metallic cation is substituted.
- (4) The substituted and inactivated metallic cation is activated so that it can connect to an effective position.

[0018]

While, the anions such as chlorine ion, bromine ion, carbonic acid ion, citric acid ion, take part in the activation of enzymes also, however, the activation of those anions generally are unspecific in many cases, and the enzyme, in this case, shows activity in a certain extent, without any electrolyte.

It is clearly recognized that the enzyme is activated by the connection with such ions, especially under an alkalinity PH, also.

( C ) Formation of the enzyme

[0019]

The enzyme, which contacts with a reactive substrate, after activated, as mentioned above, must be synthesized continuously, and this

indispensable material for an organism has to increase always, according to its growth, in proportion with increased volumes of the organism.

However, the enzymes have to be synthesized continuously because they are also decomposed in some rates, even if they don't grow up.

Accordingly, the life can not be maintained without the continuous synthesis of the enzyme, and the synthesis of the activative enzyme must be a reaction accompanying the syntheses of protein portion and a prosthetic group, in a certain case.

[0020]

However, a certain prosthetic group must be supplied from outside because the organism can not self-synthesize all indispensable prosthetic groups, and further the enzyme has to be supplied also a special metal if the former includes the later.

The supply of those prosthetic groups and the special metals is one of the indispensable conditions for the present novel material formation.

While, the reaction for enzyme formation is a self-catalytic reaction, and once the enzyme is activated by H ion, etc., it increases rapidly under the self-contact.

It should be also considered that the formation of the enzyme is controlled by a gene and a metabolic material.

( D ) Activating mechanism of the enzyme by a metallic ion

[0021]

A metal (M) forms an indispensable portion of an active center of the enzyme, and acts also as a connector to hold the substrate in the active center of the enzyme, combining with both of the enzyme and the substrate.

The connecting sequences of those factor are as follow:

- (1)  $E + M + S = E M S$  ( Complex )
- (2)  $E + M = E M$  ( Activated enzyme )  
 $E M + S = E M S$  ( Complex )
- (3)  $M + S = M S$  ( Actual substrate )  
 $E + M S = E M S$  ( Complex )

However, an enzyme reaction is necessary occasionally the enzyme (E), the substrate (S) and other material (cooperative fucter) such as the metal cations and the inorganic anions described thereabove to progress the reaction.

Summary of the inventon

[0022]

According to above studies and considerations firstly a bioprotoplasm such as biomass, organic substance in the organic residue, or organic compound including a little inorganic compound, which is shown as a general formula,  $C_a H_b O_c N_d P_e S_f$ , are used as a raw material in a process for the present adjuvant for accelating enzyme activity, and secndly added biocatalizers, for example, enzyme catalizers living in nature , cray ctalizers, microorganism group and water thereto.

The mixture thereafter is started to react under a specific condition such as an atomospheric pressure and an anaerobic condition, and oxidated imperfectly under aerobic condition, through periodrical aerobic condition, to yield a substance, which is quite alike to amniotic liquid of a mather's body in it's ingredients and effects, described thereinafter.

Detailed description of the invention

[0023]

[Example]

4 tons per one day of biomass or biological residue presented as



(9)

a general formula  $[O_aH_bO_cN_dP_eS_f]$  [but  $a-f$ ; positive number] were charged into a reactor received enzyme catalists living in nature, clay ctalizer, microorganism group and water, and reacted for 10days under an atomospheric pressure and  $23.3^{\circ}\text{C}$ - $24.3^{\circ}\text{C}$ .

2.4 tons per a day of a novel djuvant for accelating enzyme activity, which is quite alike to biological amniotic liquid, were obtaiend in the rate of 60% yield.

The novel material contained 15 kinds of inorganic materials (A) and low molecular organic material (B) including 20 kinds of indispensable basic amino acid, as shown in Tables 1 and 2, according to a quantum measurment.

However,  $R_b^+$ ,  $C_s^+$ , and  $N_i^{++}$  of the 15 kinds of inorganic materials in the Table don't be discribed for their contaents are trace.

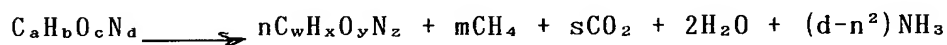
[0024]

The above reaction was also carried out in seven reactors through the following process as shown in Table 3 to 6.

First Process: Partial decompositon of an organic component,

$[C_aH_bO_cN_d]$ , under an anaerobic conditon.

(First reactor  $\alpha$ )



( In the formula:  $s = a-nw -m$  :  $r = c-ny-2s$  )

Conditions in the reaction: Normal Atomosphere

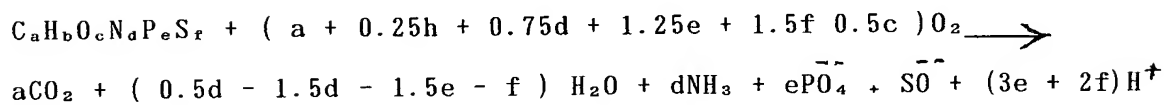
ORP : - 409 ~ -472

PH : 7.61 ~ 7.78

Temperature :  $23.2 \sim 24.3^{\circ}\text{C}$

Second Process: Forcible intermitent aerobic process

( Process that nitrogen does not be oxidized  
until nitric acid  
(Second reactor  $\beta$ )



Condition in the reaction:

ORP : 145~20

DO : 0.39~0.72

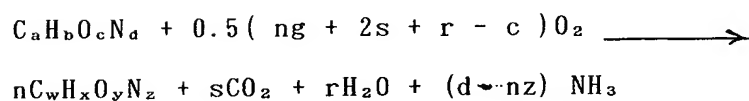
PM : 8.02~8.30

Temperature : 26.5~27.9 °C

Third Process: Imperfect oxidation process of an organic  
compound under aerobic condition

(Seventh reactor  $\gamma$ )

( P and S protion in natural organic compound are  
 neglected to show in the table because they are very  
 little (Trace) in comparison with the other atoms )



( In the formula:

$$r = 0.5[ b - mx - 3( d - nz ) ]$$

$$s = a - nw )$$

Condition in the reaction :

ORP : 53~84

DO : 0.30~0.81

PH : 7.41~7.65

Temperature: 20.0~21.1 °C

[0025]

Ingredients and special characters of the present adjuvant  
for accelating enzyme activity

The ingredients and special characters of such novel material resemble very closely with them of maternal amniotic liquid, which is indispensable not only in the steps of biological growth and functional development of the fetus but also as an information source of it's mature degree and it's certain suffering.

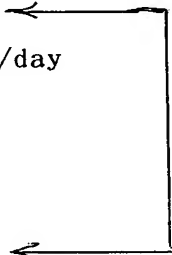
The ingredients, as same as the amniotic liquid, in the other side, include proteins organizing an amino acid and electrolyte, and further include bioinorganic compound expect for an essential amino acide, of which an organism can not produce, and an electrolyte which is necessary for activating of the organism. ( Reffer; Tables 1 and 2 )

The new material showed a light yellow color and weak alkalinity in the range of PH 7.14 to 7.65, as same as the amniotic liquid, on and after the middle term of fatus growth.

Accordingly, it provided many functions for improvements of the biological growth, biological suffering and physiological operation, and also functions for decompositon and digestion of non-biological organic or inorganic compounds, just sme as the amniotic liquid, as described hereinafter,

[0026]

Utilizations and effects of the novel material(1) Decompositon and Digestion of the non-biological organic or inorganic compounds(a) Treatment of the home raw refuse with the novel material

	<u>Prior material</u>	<u>Present new material</u>	
Initial charge of basic material	20 l	11.5 Kg	 same weight (As ever)
Charge of home raw refuse	0.7 Kg/day	0.58 Kg/day	
Total charge	210 Kg	22 Kg	
Discharge	45 l	0 Kg	
Discharged basic material	40 Kg	11.5 Kg	
Term of treatment	10 Months	38 days	

In the above experiment, 22 Kg of the home raw refuse has been completely decomposed by the present novel material to null through 38 days, although it's initial charge has not been changed at all, while the prior treatment could not digested completely even after 10 months, and remained therein 45 l of the residue.

[0027]

(b) Treatment of the business raw refuse with the present novel material

Initial charge of basic material	772 l	
Charge of business raw refuse	10.83 l / day	
Total charge	3424 l	
Discharge	0	
Discharge of basic material	772 l	
Term of treatment	316 days	

Same weight

( As ever )

In this run, the discharge of the basic material has been no charge after the treatment but the charged raw refuse has been completely decomposed and digested after 316 days.

[0028]

(c) Treatment of the drainage with the present novel material

A proper quantity of the present novel material were added to the drainage, which contains 12,000 mg/ l of mixed floating materials, and 95% or more of the later have been decomposed after 20 days.

In this reaction, a proper quantity of the drainages have reduced throughly in comparison with the basic water.

Accordingly, a completely closed circulation system can be employed in this treating system because the drainage can be recycled as a diluent of the basic water, without discharging at all.

[0029]

- ( 2 )     Improvement for physiologicl function of the  
organism by the present novel material

The present novel material provides many effects for improvement of hypofunction for endocrine and immunity systems and for prevention and improvement of healing ability of the life-style related diseases nd the chronic disease, because it has a same property as the mniotic liquid in a mathers body and therefore provides clearly a physical improving function also, as follow;

[0030]

- (a) For diabetes and hyperglycemia

Medical examinations: 30 instances: The male sex, 70%; The Female sex, 30%

Those testers, who has had blood glucase rates in 200-500 mm/dl, was dosed 30cc/day of the present novel material, and resulted in the rates of 120 - 130 mm/dl, after 30 days, respectovely.

[0031]

- (b) For diabetcs and eyesight improvement  
(Dosage instance for hyperglycemi)

(1) The male sex, 57 years old, was very difficult to look his around, due to the heavy hyperglycemia but his condition of the disease recovered completely after dosages for 30 days.

(2) The male sex, 67 years old, was almost in loss eyesight and was in the depth of the despair but recovered such that he can look the thing clearly after drinking the present novel material for some months.

[0032]

(c) For cataract

The female sex, 70 years old, and other some instances, recovered by direct eyelotion of the present novel mterial through 10 days such that she can look clearly.

[0033]

(d) For agastric cancer

Hairs of a male sex treating medically the gastric cancer, did not fl1 out for usage of the present novel material, even if he was dosed an anticancer drug material and a patient told that his life expectancy is a half year, could live long for 6 years with the present novel material, also.

[0034]

(e) For colonic polyp

The male sex, 43 years old, discovered in the large intestine a polyp has been doosed the present novel material for six days and recognized the poryp has disappeared therefrom.  
About ten other instances of the same symptom were recognized also under the same dosages.

[0035]

(f) For malignant lymphoma

The female sex, 42 years old, recovered to a healthy condition under dosages of the present novel material for almost 3 months, without radiotherapy.

A blood test shown normal.

[0036]

(g) For leukemia

The female sex, 36 years old, was sentenced a half year of her life long expectance from a doctor, however, she could live long for six years by continious dosage in the amount of 30 cc per day of the present novel material.

[0037]

(h) For hepatitis C virus ( HCV )

The female sex, 47 years old, could not recover her condition of the disese in spite of a long meical tretment, however, a blood test after dosages of the present novel material for three months, shown remarkable improvement.

[0038]

(i) For cardiac disorder



The male sex, 50 years old, was recognized a disorder on a left coronary aortic, but he recovered normally his health by dosges of the present novel material and became a cheerful man, which can work ordinarily.

[0039]

(j) For gliston

A male sex, 60 years old, had to undergo an operation for his galiston disease, however, the operation has not been necessary due to dissolution of the galiston by dosages of the present novel material. Several same results appeared on the other paitient under the same condition.

[0040]

(k) For rheumatism

A male sex, 65 years old, recovered such that he can walk confortably after continuous dosage of 30cc per day for one month, even if he was difficult to walk initially.

[0041]

(l) For skin restoration

A cut end of the navel string of a neomate did not dry and was wet long time, but it has got well completely with a gauze atring of the present novel material.

[0042]

(m) For restoration of the deep scar

Each deep scar reached to a bone of two male sexes , 50 and 30 years old resectively, restored together with disappearance of it's pain by a gauze of the novel material for about 5 days.

[0043]

(n) For restoration of bruise and distortion

Those pains disappeared by a gauze stupe without appearance of cyanosis on the stupe portion.

There are twenty successes on such medical treatment so far.

[0044]

(o) For restoration of the serious athlete

The male sex, 50 years old, restored completely the serious athlete by bathing in 100 cc /200 l solution of the present novel mterial.

Effects of the invention

[0045]

The process of present novel material namely an adjuvant for accelating enzyme activity, providing above properties and functions, is very simple and low cost because it's production material is raw life refuse and

raw business refuse, and it's apparatus is also multiple catalytic reactors only, which receive biocatalizers and microorganisms in nature, clay catalizer and water, while, the novel adjuvant can decompose and digest the agricultural and livestock rising waste materials, the life and business raw refuses, the filthy and muddy waters, without production of the residues and drainages through the reactions, because the yield resembles very closely to amniotic liquid of the biological mother's body of which includes very much the indispensable components for biophysiological mechanism.

Accordingly, the treatment of those refuses or wastes by the present novel material can be done in a completely closed system, because burning up of those residues, land reclamation of their ashes and treatment of drainages such as prior arts can be canceled respectively.

[0046]

Furthermore, the present novel material seems to be much effectively as an excellent medical drug because it shows that remarkable developments for not only dysfunction of the bioendocrine system and the bioimmunity system, but also prevention and healing of the life-style related diseases and the chronic diseases, appear on those biological tests respectively.

[0047]

Various modifications or substitutions of equivalent agricultural and medical material may be made by those skilled in the art to the disclosed embodiment without departing from the scope and extent of the invention.